



INDIANA DEPARTMENT OF TRANSPORTATION

Driving Indiana's Economic Growth

Memorandum

July 31, 2008

CONSTRUCTION MEMORANDUM
08-10

TO: District Deputy Commissioners
District Highway Operation Directors
District Construction Engineers
District Testing Engineers
District Area Engineers
Project Engineers/Supervisors

FROM: Mark A. Miller, Director
Division of Construction Management

Dennis A. Kuchler
Acting 7/31/08

SUBJECT: Revised Special Provision for Flowable Backfill

The Department has recently has concerns about the testing for determining if a flowable backfill is removable. To help eliminate those concerns we will be revising our current Recurring Special Provision that is placed in contracts. Recurring Special Provision 211-R-543 for B Borrow and Structural Backfill specifies that the structure backfill shall be Type 1, Type 2, Type 3, Type 4, or Type 5 and within each of these structure backfill types the Contractor may choose from the listed options. Removable flowable backfill is required for the Type 4 structure backfill and is listed as an option for Type 1 and Type 2 structure backfill. The procedure for determining if a flowable backfill is removable is included in Recurring Special Provision 213-R-446.

Recurring Special Provision 213-R-446 for Flowable Backfill requires that the lightweight dynamic cone penetration test and the Removability Modulus be used to determine if the flowable backfill is removable. The requirement for the lightweight dynamic cone penetration test is that the average penetration resistance blow count number shall not be less than 20 nor greater than 30 after the flowable backfill has cured for three days. Initial trial batch demonstrations have indicated that the resistance blow count of 20 is not correct and that this number should be lowered to 12 blows. Also, the use of Darafill®, Darafill® Dry, or equal should be allowed to be used in removable flowable backfill.

We are requesting that the attached proposed special provision language be incorporated into all existing contracts that require Type 1, Type 2, or Type 4 structural backfill by means of a no cost change order.

FLOWABLE BACKFILL

Recurring Special Provision 213-R-446 is revised as follows:

SECTION 213.02, ADD AS FOLLOWS:

MATERIALS

213.02 Materials

Materials shall be in accordance with the following:

Concrete Admixtures.....	912.03
Fine Aggregate*	904.02(a)
Fly Ash	901.02
Portland Cement	901.01(b)
Water	913.01

*Except that steel furnace slag shall not be used

Darafill ®, Darafill ® Dry, or equal may be used in removable flowable backfill.

~~If fly ash is used as a filler and not as a pozzolan, the fly ash shall be in accordance with 904.~~

The supplier may elect to use nominal size No. 23 and No. 24 gradations in accordance with 904.02(h) or may propose the use of alternate gradations. The alternate gradation and proposed tolerances of material passing each sieve shall be included in the flowable backfill mix design.

SECTION 213.04 (b), DELETE AND ADD AS FOLLOWS:

(b) Lightweight Dynamic Cone Penetration Blow Count Number

A lightweight dynamic cone penetration test will be performed in accordance with ITM 216 after the flowable backfill mix has cured for three days. The average penetration resistance blow count number for removable flowable backfill shall not be less than 20 12 nor greater than 30. Non removable flowable backfill mixes shall have an average penetration resistance blow count greater than 30.

MAM:DAK:dak